

DESTRUCTION OF ORGANOPHOSPHONATE COMPOUNDS

ABSTRACT

Volatile organic compounds, for example organophosphonate compounds including chemical warfare agents, pesticides, and solvents, are decomposed by contacting the compounds with either a manganese oxide catalyst in the presence of visible light or a catalyst material selected from the group consisting of vanadium, vanadium oxide, manganese oxide and mixtures thereof deposited upon a catalyst support that is heated to at least 300 C. The catalyst material may be regenerated by a process selected from the washing with water, washing with a solvent, heating, exposing to light, purging with oxygen, purging with a reactive gas, exposing to microwave radiation, and combinations thereof. The catalyst composition may be used as an air filter in a vehicle, a building or a personnel protection device, such as a gas mask.